X

PROGRESS REPORT

OF THE

FOREST SURVEY BRANCH

FOR

1891-92.

CALCUTTA:
OFFICE OF THE SUPERINTENDENT OF GOVERNMENT PRINTING, INDIA.
1893.

No. 442-F., dated 21st April 1893.

File No. 108.

Serial No. 2.

From—SIR E. C. BUCK, KT., C.S.I., Secretary to the Government of India, Revenue and Agricultural Department,

To—The Surveyor General of India.

I AM directed to acknowledge receipt of the Progress Report of the Forest Survey Branch for the year 1891-92, submitted under cover of your letter No. 22-S., dated the 21st February last.

2. The operations of the year, which were conducted, as heretofore, under the superintendence of Mr. W. H. Reynolds, having been fully summarized in your letter, any further review is unnecessary. But the Government of India desire to record their appreciation of the continued energetic and economical administration of the Branch, as evidenced by the areas surveyed and the cost-rates of the various surveys undertaken.

3. With reference to paragraph 7 of your letter under reply, I am to express a hope that instructions will be given to expedite the issue of the numerous forest maps now awaiting publication, and to ask that you will, in personal communication with the Inspector-General of Forests, be good enough to consider whether any arrangement can be devised which will permit of the forest maps being, in future, printed under the direction of the Forest Survey Branch at Dehra.

No. 443-F.

COPY, with copy of the letter replied to, forwarded to the Inspector-General of Forests for information.

G. C. Press, Simla.—No. 22 R. & A. D.—26-4-93—200.

No. 565-S., dated Calcutta, the 21st February 1893.

From—COLONEL H. R. THUILLIER, R.E., Surveyor General of India,

To—The Secretary to the Government of India, Revenue and Agricultural Department.

I HAVE the honour to forward the Annual Progress Report for the year 1891-92 submitted by Mr. W. H. Reynolds, Superintendent of Forest Surveys, under whom the operations have been carried out.

2. The operations were entirely in continuation of those of the previous season, *viz.*, in Bashahr, Punjab; in Raipur, Bhandara and Mandla districts, Central Provinces; in Goalpara district, Assam; and in the Tenasserim Circle, Lower Burma. The surveys in these localities are still in progress, and no new operations were commenced during the year.

3. The total outturn of field-work and mapping executed during the year is given in Appendices A and B of the Report.

The aggregate area topographically surveyed on various scales amounts to 1,586 square miles, of which 149 square miles were mapped on the 16-inch scale, 1,072 square miles on the 4-inch scale, and 365 square miles on the 1-inch scale. This outturn shows an increase of 205 square miles over that of the year previous. This is partly due to an additional detachment having been employed on topographical work in Burma, and partly to the causes which combined to raise the outturn of the year under review, *viz.*, the comparatively easy nature of the country operated on in the Central Provinces and Assam, in which also the duration of the field-season was lengthened. A statement of the classes of areas surveyed is given in Appendix D. With the exception of 365 square miles done in Bashahr for topographical purposes, the work was executed in demarcated forests.

The area triangulated amounts to 2,357 square miles, against 2,827 square miles in the previous year. The traversing of 205 linear miles was carried out over an area of 175 square miles, chiefly in Burma, in very intricate and difficult country. The whole of the triangulation and traversing executed is in advance of the area topographically surveyed for next season's detail work.

4. The detail surveys in each locality, with the exception of the work in Assam, which is left for next season, were checked in the usual manner by the European assistants. Instrumental contour lines were run at fixed vertical intervals, and in addition 196 linear miles of check surveys were run, as well as 123 miles of levelling.

In Assam, the instrumental contours were not necessary, as the country is for the most part flat; and in Burma this means of check could not be resorted to, owing to the nature of the country. The result of the check surveys was satisfactory and but little revision was found necessary.

5. In Bashahr, the cost rates per square mile of the detail surveys were Rs. 53·3 for the 4-inch work and Rs. 13·7 for the 1-inch work, excluding the cost of triangulation. The rate for the 4-inch work shows a decrease of Rs. 8·8 compared with that of last year; that for the 1-inch work was slightly higher than last year's rate.

In the Central Provinces, the average cost rate of the detail surveys in the three districts, including the 16-inch boundary surveys and the classification of the forest growths and soils, and excluding triangulation, amounts to Rs. 46·9, or one rupee less than last year's rate.

In Assam, the cost rate of the area surveyed on the 4-inch scale was Rs. 42·3, as against Rs. 44 in the previous year; that of the triangulation and traversing together amounted to Rs. 11·5.

In Burma, the cost rate of the 4-inch detail survey, which was commenced during the year under report, was Rs. 86; that of the triangulation was

Rs. 15·8, and of the traversing Rs. 31·4. The expenditure from which these rates have been deduced is exclusive of the charges for the purchase of six elephants.

6. Mr. Reynolds visited each of the localities in which the survey operations were in progress, and inspected the various detachments in the field. He left head-quarters on the 24th November 1891, and proceeded to Burma to start the detail survey in the Tenasserim Circle. Thence he proceeded to Assam in January 1892, and, after inspecting the field operations, left early in February for the Central Provinces, where he remained for about a month, inspecting the three detachments there. In March he proceeded to Dehra Dun to assist in examining in surveying the students of the Forest School. On the 28th April he went to Bashahr, and remained with the detachment there until the close of the field season in July 1892.

7. A summary of the mapping done during the year is given at page 10 of the Report, and shows that good progress has been made in the drawing of the fair maps of the season's work. The reproduction and publication thereof were in abeyance, however, owing to the press of work in the Photographic Office of the Trigonometrical Branch at Dehra.

8. The establishment generally is favourably reported on.

9. The year's record of work and the economical rates at which the surveys have been effected are again highly satisfactory, and testify to the successful administration of the Branch by Mr. Reynolds and to the efforts of the officers under him.

10. The total expenditure for the year amounts to Rs. 1,24,649, against Rs. 1,10,164 in 1890-91 and Rs. 91,553 in 1889-90. The increase is due to the commencement of the topographical survey in Lower Burma, the advance triangulation and traversing of which was executed in 1890-91.

G. C. Press, Simla.—No. 23 R. & A. D.—25-4-93.—240.

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ANNUAL PROGRESS REPORT

OF THE

FOREST SURVEY BRANCH OF THE FOREST DEPARTMENT

FROM 1ST OCTOBER 1891 TO 30TH SEPTEMBER 1892.

BY

W. H. REYNOLDS, ESQ., F.R.G.S.,
SUPERINTENDENT OF FOREST SURVEYS.

THE operations of the Forest Survey Branch that are now reported on are for the survey year of 1891-92, or for the period 1st October 1891 to 30th September 1892.

2. Throughout the year, Mr. W. H. Reynolds, Superintendent of Forest Surveys, continued to direct and supervise the operations of the Forest Survey Branch.

THE SEASON'S FIELD WORK.

Surveys in progress.

3. Field work was carried on in continuation of the previous season's operations, in Bashahr in the Punjab, in the districts of Raipur, Bhandara, and Mandla in the Central Provinces, the district of Goalpara in Assam, and in the Tenasserim circle of Lower Burma.

Duration of field season.

4. The average duration of the field season for parties working in the Central Provinces was about six and a half months, for those working in the Himalayas it was about five months; the Assam and Burma parties were out for seven and four and a half months respectively.

The Central Provinces and Assam detachments were in the field from November to early in June, the Raipur party did not leave the field until the end of June; in Burma the surveyors were out from November to the middle of April, and in the Himalayas they were out during the summer season for various periods from two to five months.

Area topographically surveyed.

5. The total area topographically surveyed during the year on various scales amounts to 1,586 square miles as against 1,381 square miles in the previous year.

The total area is made up as follows:—

Surveyed on the	1-inch	scale,	365	square miles.
"	4-inch	"	1,072	"
"	16-inch	"	149	"

Forest growth and soil tracings.

6. For all areas surveyed on the 4-inch scale tracings illustrating the distribution of forests were prepared, and for the forests in the Central Provinces the classification of soils was also recorded.

Check surveys.

7. The European Assistants in charge of detachments applied the usual checks to the areas topographically surveyed, and in addition to instrumental

contour lines at fixed vertical intervals, 196 linear miles of check surveys were run, as well as, 123 miles of levelling. The work stood the tests that were applied and little or no revision was necessary.

Triangulation.

8. Triangulation was extended over an area of 2,357 square miles as compared with 2,827 in the previous year; of this area 643 square miles was carried through most difficult forest-clad and almost uninhabited country in Burma.

Traversing.

9. Over an area of 175 square miles 205 linear miles of traversing was run, chiefly in Burma, with theodolite and two chains of unequal lengths. The country traversed was most difficult and intricate, the stations were at very short intervals, and the clearing of the traverse lines through dense undergrowth and bamboo jungle was a most arduous undertaking. The traversing throughout was connected with the triangulation and corrected down to the values of the trigonometrical stations.

Triangulation and traversing in advance.

10. All the triangulation and traversing reported is in advance of the topographical work, and the computed values of the stations are available for the coming season's topographical work.

Comparison with previous year.

11. As compared with the previous season, the area topographically surveyed is in excess of that reported in 1890-91, but the triangulated area is less. The same causes which contributed to a favourable outturn of topographical work last year have again been the means of the present year's satisfactory results. The areas operated on in Assam and the Central Provinces were less hilly than usual, and the surveyors were enabled to remain in the field to a comparatively late date, and consequently returned a larger outturn of work.

Summary of outturn of field work and computations.

12. In Appendix A, will be found a summary of the outturn of field work and computations, and in Appendix D is given a statement of the classes of areas surveyed.

New surveys.

13. In the correspondence ending with Inspector General of Forests' No. 402, dated 11th June, and No. 482 dated 29th June, 1892, the surveys of the Pyinmana forests in Upper Burma and of the Reserved forests in Oudh were ordered. Arrangements have been made to commence these operations during the coming field season.

14. The total expenditure for the year incurred by the Forest Survey Branch in the several provinces in which survey operations were in progress, as well as for other special work not connected with these surveys, was R1,24,649 against R1,10,164 in the previous year. The increase in expenditure is due to the topographical or detail survey having been taken in hand of the tracts in Lower Burma that were tiangulated and traversed in advance during 1890-91.

Expenditure under Provincial headings.

15. Appendix C exhibits in detail, and arranged under Provincial headings, the expenditure for the survey year.

Cost-rate.

16. The cost-rate for each of the Provincial surveys is given under the heading of the province in which surveys were in progress, and under the same headings is given detailed information regarding the progress of each of the Provincial surveys.

17. During the coming survey year of 1892-93 field oprations will be carried on in the following Forest divisions :—

Programme for 1892-93.

(i)	Bashahr	Punjab.
(ii)	Bhandara	Central Provinces.
(iii)	Raipur	Central Provinces.
(iv)	Jubbulpore	Central Provinces.
	Narsingpore	Central Provinces.
(v)	Goalpara	Assam.
(vi)	Pilibhit	Oudh.
	Kheri	Oudh.
(vii)	Salween	Burma.
	Pyinmana	Burma.

PUNJAB.

Bashahr survey.

18. In the Punjab the survey of the Bashahr state was resumed in continuation of the previous year's work. Triangulation was extended to the extreme northern frontier, touching on Chinese Thibet and Spitti, and the positions and heights of most of the prominent and inaccessible snowy peaks on this frontier were fixed. Topographical work on the 4-inch scale was carried on in the Neogli and Pandra Bis Ranges and parts of standard sheets Nos. 332, 345, 346, 347, and 352 were surveyed on the 1-inch scale.

Triangulation.

19. Triangulation was carried on in the Spitti valley and on the northern frontier of Bashahr from the end of June to early in September, and as the country operated on is exceedingly elevated, ranging from 12,000 to 20,000 feet above sea level, those employed in these elevated and remote regions had to endure considerable hardships, and great credit is due to Pandit Salig Ram for the satisfactory manner in which he completed his triangulation under most trying circumstances. The area triangulated was 555 square miles against an area of 472 in the previous year. A portion of the triangulation was done by Mr. E. Litchfield.

Area topographically surveyed.

20. The surveyors employed on topographical work took the field towards the end of May, and returned to head-quarters by the end of October. Against an area of 611 square miles surveyed during the previous season, an area of 525 square miles was completed during the year under report; of this area, 160 square miles were surveyed on the 4-inch scale and 365 square miles on the 1-inch scale. The area surveyed on the smaller scale is less than the outturn of the previous year, this is due to the fact that the surveyors employed on the 1-inch work during 1891-92 were employed for a shorter period on the small scale survey.

Throughout the areas surveyed on the 4-inch scale, instrumental contours were run at vertical intervals of 500 feet and a record of forest growth was also prepared.

Supervision of field party.

21. From the end of April to the middle of July, Mr. Reynolds, Superintendent of Forest Surveys, was in Bashahr personally supervising the survey.

Index map showing progress.

22. The progress of the survey is illustrated on the index map to the survey of the Bashahr state, which is attached to this report.

23. The total expenditure of the Bashahr survey for the year under report was R15,946 against R19,286 in the previous year; the details are given in Appendix C.

Season's cost-rate. Appendix C.

The cost-rates of the season's work estimated on the areas surveyed in detail are as follow :—

	R
Topographical survey on the 4-inch scale . .	53·3 per square mile.
" " " 1 " . . .	13·7 " " "
Triangulation in advance	4·3 " " "

The above figures compare favorably with the cost-rates for the previous year, which were as follow :—

	R
Topographical survey on the 4-inch scale . .	62·1 per square mile.
" " " 1 " . . .	12·2 " " "
Triangulation in advance	8·3 " " "

CENTRAL PROVINCES.

24. The Forest Survey Branch was employed in the Central Provinces in surveying the forest tracts in the districts of Raipur and Bhandara in continuation of the previous season's operations, and the survey of the forests of the Dhanwai Range in the Mandla District was commenced.

Central Provinces surveys.

25. It is expected that the survey of the forests in the Dhanwai Range will be completed during the early part of the coming field season, and the detachment employed on this survey will move into the Narsingpur District and commence operations there in accordance with the programme laid down by the Chief Commissioner, in Secretary to Chief Commissioner's letter No. 6534—448 dated 11th September 1891.

Surveys completed and new surveys instituted.

26. The total expenditure incurred by the Forest Survey Branch for surveys in the several districts of the Central Provinces, *viz.*, Raipur, Bhandara, and Mandla, including the small charge of R221 for the Chanda mapping, was R30,194, compared with R28,290 in the previous year. The details are given in Appendix C.

Expenditure.

27. The total area topographically surveyed on the 4-inch and 16-inch scales was 626 square miles, as against 591 square miles completed in the previous season; and the average cost of the entire season's work, including the 16-inch boundary surveys and the preparation of the soil and forest distribution records, was R46·9, compared with a cost-rate of R47·9 during the previous year. The triangulation in the Bhandara district cost R2·9 per square mile.

Area surveyed and average cost.

28. In Appendix A will be found a summary of the season's field work, and in Appendix B is given a summary of the original drawings under preparation during the year.

Summary of field and office work.

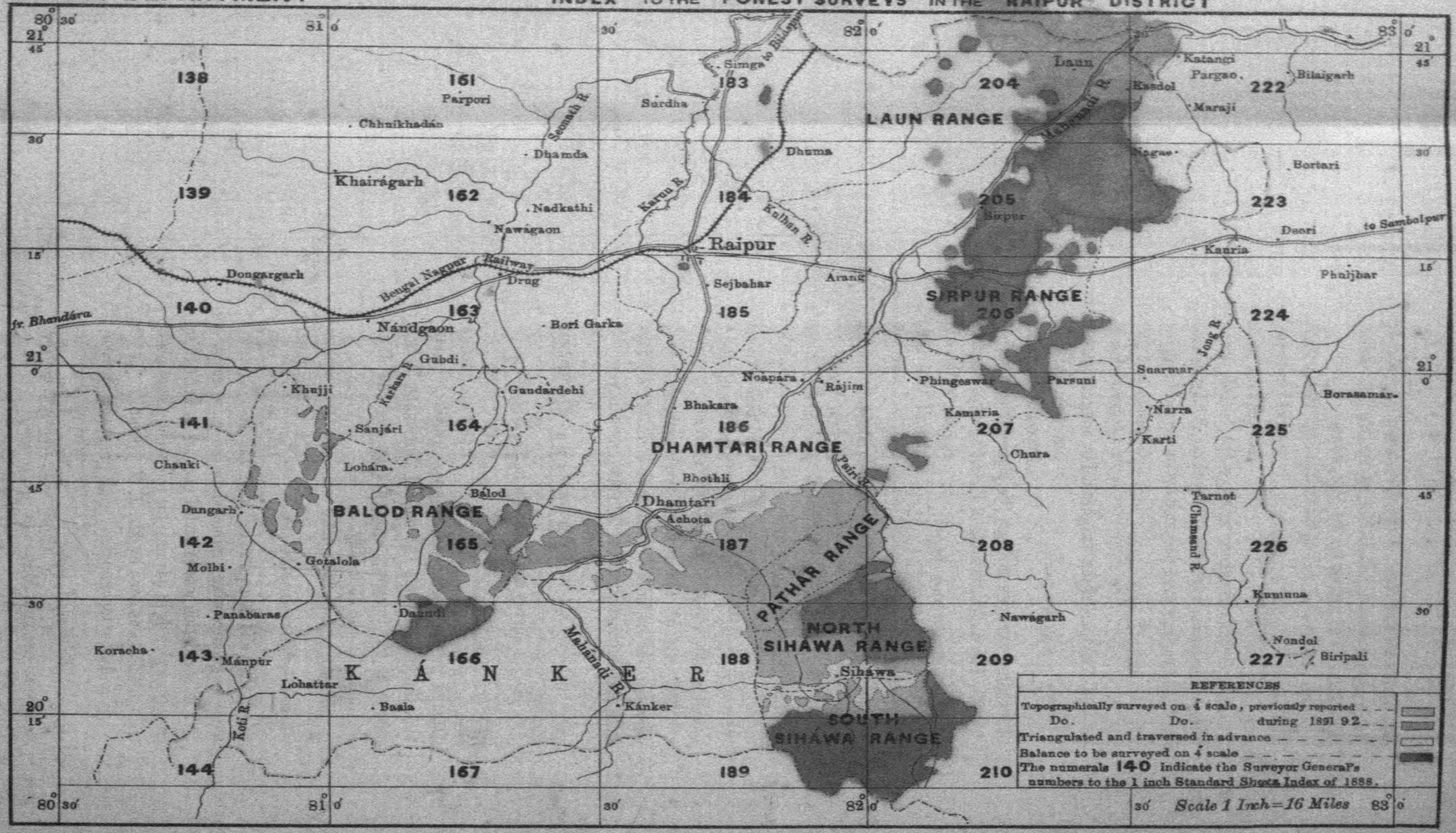
RAIPUR DISTRICT.

29. In the Raipur District surveys were carried on in continuation of the previous season's operations, and were confined, for the most part, to the forests in

Raipur surveys.

FOREST DEPARTMENT

INDEX TO THE FOREST SURVEYS IN THE RAIPUR DISTRICT



Photozincographed at the Office of the Trigonometrical Branch, Survey of India, Dehra Dún, November 1892.

the Dhamteri Pargana. The detachment under Mr. James Marten, Sub-Assistant Superintendent, left Dehra on the 8th November, and the field operations were brought to a close on the 30th June.

Area topographically surveyed.

30. An area of 241 square miles was topographically surveyed, compared with 222 in the previous year; of this area, 193 square miles were surveyed on the 4-inch scale and 48 square miles on the 16-inch scale, and 405 linear miles of forest boundaries were also surveyed on the larger scale.

Forest and soil tracings.

31. Tracings were prepared for all forest areas surveyed, detailing the distribution and density of forest growth as well as the classification of soils.

Tests applied to the work.

32. The topography was checked by running instrumental contours throughout the work, and 128 linear miles of "pertal" or check surveys and 98 miles of levelling were run through the plane-table work.

Superintendent's inspection.

33. The Superintendent of Forest Surveys was in the Raipur District from the 8th to the 15th February, and satisfied himself that the survey work was being efficiently conducted.

Raipur index map.

34. The index map of the Raipur District illustrates the progress of the survey, and the details of the field work are given in Appendix A.

Cost.

35. The expenditure on account of field and office work was R6,300, and the total expenditure for the year on account of the Raipur Forest Survey, including all charges, was R9,324.

The cost of the season's work estimated on the area topographically surveyed, and including the 16-inch boundary surveys, was R38·7 per square mile, as compared with R41·9 in the previous year.

BHANDARA DISTRCT.

Bhandara surveys.

36. The survey of the forests in the Bhandara District was in continuation of the work of the previous year. The tracts operated on are, for the most part, situated in the Partabgarh Range. The detachment under Mr. J. H. Nichol took the field towards the end of November, and Mr. C. Litchfield assumed charge of the topographical work on the 2nd January; out-door work was continued till the 25th May.

Area triangulated and topographically surveyed.

37. An area of 229 square miles was topographically surveyed, as against 174 in the previous year; of this area, 166 square miles was surveyed on the 4 inch scale and 63 square miles on the 16-inch scale, and 500 linear miles of forest boundaries were completed on the larger scale.

Triangulation was extended over an area of 615 square miles, the greater part of which is in advance for the coming season's topographical work. The triangulation was done by Mr. J. H. Nichol.

Forest and soil record.

38. As the topographical work progressed, a record was prepared, similar to that prepared for the forests in the Raipur District, showing the distribution of forests and classification of soils.

39. The topography was checked by running instrumental contours throughout the entire work at fixed vertical distances, and 22 linear miles of "pertal" or check lines were also run through the work.

Tests applied.

The 16-inch boundary sheets have yet to be compared with the settlement map records. The settlement papers, at the close of the field season, were not sufficiently advanced for purposes of comparison.

40. The Superintendent of Forest Surveys was in the Bhandara District from the 16th to the 27th February, and was satisfied that the triangulation and other field work of this party was being efficiently conducted.

Superintendent's inspection.

41. The progress of the work is illustrated on the Bhandara index map, and the details of the field work will be found in Appendix A.

Bhandara index map.

42. The cost of the field and office work for the season was R6,896, and the total expenditure for the year, including all charges, was R9,977 compared with R9,103 in the previous year.

Cost.

The cost of the 4-inch topographical work, including the 16-inch boundary surveys and the preparation of the records of forest distribution and classification of soils, was R35·9 per square mile, as against R39 in the previous year.

The season's triangulation cost R2·9 per square mile.

MANDLA DISTRICT.

43. The survey of the forests in the Jubbulpore District having been completed in 1890-91, the detachment employed upon this work was deputed to take up the survey of the Dhanwai Forest Range, in the Mandla District, in accordance with the programme laid down in Secretary to Chief Commissioner's letter No. 6534—448, dated 11th September 1891.

Mandla surveys.

The detachment under Mr. T. S. Marten left Dehra on the 8th November, and was in the field till the end of May. The survey operations were confined entirely to the forests in the Dhanwai Pargana in the northern part of the Mandla District, but the forests, for administrative purposes, form a part of the Jubbulpore Forest Division.

44. The area topographically surveyed was 156 square miles, of which 118 square miles were surveyed on the 4-inch scale and the balance was done on the 16-inch scale. Two hundred and eighty-eight linear miles of forest boundaries were also surveyed on the 16-inch scale, and 51 miles of boundaries had to be gone over a second time for the purpose of re-numbering the pillars.

Area topographically surveyed.

45. For all forests under survey a record was prepared, illustrating the distribution of forests and the classification of soils.

Distribution of forests and soil tracings.

46. The topographical work was tested in the usual way by running instrumental contours at prescribed vertical intervals, and 13 miles of check surveys were also run as well as 25 miles of levels.

Tests applied to work.

47. The Superintendent of Forest Surveys was in the Jubbulpore and Mandla Districts from the 28th February to the 8th March, and inspected the accounts

Superintendent's inspection.

of this party and satisfied himself that the field work was being properly conducted.

Index map illustrating progress of survey.

48. The progress of the survey is illustrated on the index map of the Jubbulpore Division and the details of the field work are given in Appendix A.

Cost.

49. The cost of the field and office work for the year was R7,330, and the total expenditure incurred on account of the forest surveys in the Mandla District was R10,313.

The cost of the season's work estimated on the area plane-tabled was R66·1 per square mile, which includes the 16-inch boundary surveys and the preparation of the forest distribution and soil records. This cost-rate is somewhat higher than the cost-rates of similar work done in the other districts of the Central Provinces during the year under report, and it is chiefly due to the fact that the surveyors were new to the district; the tracts under survey are notoriously unhealthy, and delays occurred in obtaining traverse data from No. 9 Survey Party.

NORTH-WESTERN PROVINCES.

North-Western Provinces.

50. No field operations were undertaken in the North-Western Provinces during the year under report, but a small expenditure of R426 was incurred chiefly on account of map-drawing and the printing and publishing of forest maps.

ASSAM.

Goalpara surveys.

51. The operations in the Goalpara District were in continuation of the survey of the previous year. The detachment, which was under the charge of Mr. E. Litchfield, Assistant Superintendent of Forest Surveys, left Dehra on the 4th November; field work was commenced on the 18th idem, and the surveyors continued to do out-door work till the middle of June.

Area topographically surveyed.

52. The area topographically surveyed on the 4-inch scale was 307 square miles compared with 180 square miles in the previous season, and a record of distribution of forests and classification of soils was also prepared. The comparatively large out turn of plane-tabling is due to the surveyors as well as the imported laborers having become better acquainted with the country, and a more suitable arrangement having been introduced for provisioning the several camps, and the country also is flat and less broken than that generally operated on by Forest Survey parties.

The greater part of this area, however, has yet to be checked in detail by the officer in charge, who was unable to complete this part of the work owing to the triangulation and computations having engaged most of his attention during the field season.

Triangulation and traversing.

53. Triangulation was extended over an area of 544 square miles, and 19 linear miles of traversing were run.

The triangulation was done by Mr. E. Litchfield.

Tests applied to the work.

54. The tracts under survey being for the most part flat country, it was unnecessary to run instrumental contours. The most suitable way of checking the

topographical work in the Goalpara forests will be to run check lines across the drainage, and this has already been done to the extent of 33 linear miles, the greater part of the area, however, still remains to be checked.

Computations revised.

55. Most of the Goalpara computations done during the field season have had to be re-computed in the head-quarters office; the officer in charge is entirely responsible for what has happened, and it points to the fact that Mr. Litchfield is not as expert at computations as an officer in his position ought to be.

Superintendent's visit to field party.

56. The Superintendent was in the Goalpara District from the 22nd January to the 6th February; he examined the accounts of the field party and answered all references that were brought to his notice.

Goalpara index map.

57. The Goalpara index map illustrates the progress of the survey, and the details of the season's field work are given in Appendix A.

Cost.

58. The amount expended on field and office work was R13,653, and the total expenditure for the year, including all charges, was R19,240, as against R21,186 in the previous year.

The cost rate per square mile of the area topographically surveyed on the 4-inch scale was R42·3, compared with R44 per square mile in the preceding year.

The triangulation and traversing together cost R11·5 per square mile.

BURMA.

Survey of forests in the Salween Division.

59. The survey of the forests in the Salween Division was in continuation of the preliminary operations of triangulation and traversing commenced in season 1890-91.

The main detachment of the party proceeded to Moulmein about the middle of November, and the plane-table work was started early in December in the forest tracts that had been triangulated and traversed during the previous year.

The forests topographically surveyed are on the Siam frontier, and are situated in the hills lying to the west of the Thoungyin River and immediately to the north of Miawaddi; the tracts are densely covered with tropical vegetation and are very sparsely inhabited by Karens; lines of communications are most difficult, and supplies for the surveyors had to be brought from considerable distances. The surveyors continued to do out-door work up to the middle of April, when, from sickness and deaths in the establishment, it was deemed inexpedient to continue field work any longer, the party returned to head-quarters.

Charge of party.

60. Mr. Reynolds, Superintendent of Forest Surveys, was in the Tenasserim circle from the 3rd December to the 12th January, and having seen to the plotting of the field sections and satisfying him that all branches of the work had been fairly started, the supervision of the survey was left in the hands of Mr. Hauxwell, Deputy Conservator of Forests.

Area topographically surveyed.

61. The area topographically surveyed on the 4-inch scale was 128 square miles.

62. Triangulation was extended over an area of 643 square miles of most difficult forest-clad country, and 168 square miles were traversed in advance

with theodolite and two chains of unequal lengths to guard against errors in measurements. The traversing had to be run over exceedingly rough country and through dense undergrowth, where every line had to be cleared.

Traversing and triangulation in advance.

63. The traversing has been connected throughout with the triangulation and corrected to the values of the trigonometrical stations.

Traverse connections.

64. The traverse and trigonometrical computations were all done at the head-quarters office at Dehra-Dun, and the plotted plane-table sections have been prepared for the coming field season.

Computations.

65. Owing to the nature of the country it was not possible to run instrumental contours through the work as was done elsewhere, but each surveyor's topographical work was gone over and checked by an expert, two of whom were employed entirely on this branch of the work.

Tests applied to the work.

66. The progress of the survey is illustrated on the index map of the Tenasserim circle, and the details of the field work and computations are given in Appendix A.

Index map.

67. The cost of the field and office work for the season was R14,310, and the total expenditure for the year, including all charges, was R33,038. These figures cannot be compared with the figures of the previous year, as only the preliminary work of triangulation and traversing were taken in hand in 1890-91.

Total cost.

68. The cost of the 4-inch topographical survey, estimated on the area plane-tabled, was R86 per square mile.

Cost-rate of topographical survey.

69. The cost of the triangulaton was R15·8 per square mile, and the traversing cost R31·4 per square mile, compared with R27·2 and R32·2, respectively, in the previous year.

Cost-rate of triangulation and traversing.

The above cost-rates are exclusive of the charges for the purchase of six elephants, which are to be transferred to the Forest Department on completion of the Burma surveys.

70. Mr. Hauxwell had an arduous task to perform in keeping the several survey camps properly supplied with provisions and coolie labour, but his forest duties absorbed so much of his time that he was unable to give the traverse surveyors sufficient attention, more particularly in the matter of the connections of the traversing with the triangulation.

Mr. Hauxwell's supervision.

The traverse surveyors, during the coming field season, are to move into the Pyinmana Division.

71. The Superintendent of Forest Surveys desires to acknowledge the invariable courtesy and valuable assistance afforded by Major Bingham, Conservator of Forests, in all matter connected with the Survey operations in his circle.

Assistance afforded by Major Bingham.

BERAR.

72. During the year under report no original surveys have been done in Berar, but a sum of R547 was expended on account of map-drawing and other miscellaneous work.

OFFICE WORK.

73. An abstract of the season's computations will be found in Appendix A. The number of triangles computed in duplicate was 942, and the rectangular co-ordinates of 530 trigonometrical points and of 4,270 traverse stations were deduced. To determine the heights above sea-level of 467 stations, 883 triangles were computed in duplicate. The rectangular co-ordinate of 563 points were converted from latitudinal and longitudinal values, and 5,842 co-ordinates of Revenue survey stations were converted into rectangular co-ordinates, referrible to the Forest Survey stations of origin. From 3,117 observations with the tangent scale clinometer, the height above sea-level of 1,613 points were computed, and abstracts were prepared from triangulation field books of 2,647 horizontal angles.

Computations.

74. The areas of forests in 2 standard 4-inch sheets of Bashahr, 20 sheets of Jubbulpore, and 2 sheets of the Raipur District have been deduced, as well as numerous other miscellaneous areas for forest purposes.

Areas.

MAP DRAWING.

75. In Appendix B will be found a summary of the original drawings under preparation or published during the year, as well as other miscellaneous office work executed by the Forest Survey Branch.

Appendix B.

76. A revised edition of sheets Nos. LIV and LX of the 4-inch forest maps of Kumaon and Garhwal has been published, and sheets Nos. LIII, LIII A, and LIVA are still in the press.

North-Western Provinces and Oudh. Central circle.

77. For the School circle two sheets on the 4-inch scale of the leased forests in Tehri Garhwal have been published, and two sheets of the same series have gone to the press. A map on the 4-inch scale of the Karamba forest in the Jaonsar Division, and a map on a similar scale of the Lachiwala Coppice circle in the Dehra-Dun Division, are also in the press; and 4-inch sheets Nos. 333 N. E.-4 and 348 N. W.-3 (Punjab), which contain portions of the Bashahr state, as well as portions of the Tehri forests, are in progress.

School Circle.

78. Of the Punjab maps, 12 standard sheets on the 4-inch scale of the Bashahr state, as well as an index map of Bashahr on the scale of 1-inch= 8 miles, have been published; 4 of the 4-inch sheets of Bashahr are in the press, and 12 are ready for the press or in progress, and standard sheet No. 347 (Punjab) on the 1-inch scale is also in progress. Four charts of triangulation, *viz.*, sheets Nos. 331, 332, 333, and 348 on the 1-inch scale are in progress.

Punjab.

79. An index map to the Forest Survey of District Goalpara in Assam has been published on the scale of 1-inch = 8 miles, and a map on the scale of 4 miles = 1 inch of the Darugiri Forest in the Garo Hills Division has also passed through the press.

Assam.

80. A map of the Melghat taluq in three sheets on the scale of 1-inch = 1 mile is in progress, and an index map on the ½-inch = 1 mile scale of the Bairagarh

Berar.

and Gugumal Reserves, showing the working-blocks and compartments together with their areas, was prepared in duplicate and furnished to local authorities.

Central Provinces.

Northern circle.

81. Of the 4-inch standard sheets of the Jubbulpore District, 11 sheets are in the press and 45 sheets are in progress. The majority of the sheets reported as being in progress are practically ready for the press; but as the sheets sent to press last year have, up to date, not been published owing to a press of work in the Photozincographic Office, the publishing of the present season's maps will have to be held in abeyance until the Photozincographic Office is ready to receive them.

Southern circle.

82. Six sheets on the 4-inch scale of the Ahiri forests in the Chanda District are still in the press, and 12 sheets of the Raipur District as well as 16 sheets of the Bhandara district, on a similar scale, are in progress.

Two index maps of the Raipur and Bhandara Districts on the scale of 1-inch = 16 miles and 1-inch = 8 miles, respectively, have been passed through the press.

Lower Burma.

Pegu circle.

83. For the Pegu circle three maps of different working-circles on the 1-inch scale were published, and a map on the 1-inch scale of the Kangyin Reserve is in progress.

Tenasserim circle.

84. For the Tenasserim circle an index map on the scale of 1-inch = 32 miles has been published, and four standard sheets on the 4-inch scale of the forests in the Salween Division are in progress.

Upper Burma.

85. Four maps of various forest reserves on the 1-inch scale have been published for Upper Burma, and two maps on similar scales are in progress.

Tracings and other miscellaneous work.

86. For the Forest Department and for various District Officers 45 tracings were prepared, 493 maps were cut up and mounted in book form, and 1,058 printed maps were coloured.

Tracings were prepared for 68 standard sheets on the 4-inch scale, illustrating the distribution of forests.

PROVINCIAL MAP RECORDS.

87. Revisions have been made from time to time to the Provincial map records as new reserves have been gazetted, and on 191 maps of various scales the forests in the Punjab have been located and posted to date; 110 maps have also been dealt with in posting up the forests in other provinces.

Revised lists of the best available maps in the several provinces under the Government of India, as well as in Madras, are under preparation, and an alphabetical list of all the gazetted forests in India is being prepared, giving the numbers and dates of Notifications and a reference to the best available maps on which the forest areas are shown; the alphabetical list is ready down to letter K, and, when completed, will be a most valuable record for ready reference.

This branch of the work is in Mr. Descubes' hands, and he executes it in a most energetic and able manner.

Revised forest map of India.

88. The revised forest map of India in four sheets on the scale of 48 miles = 1 inch, referred to in paragraph 82 of last year's progress report, has been sent

to the press, but the officer in charge of the Calcutta Photozincographic Office is unable, owing to a press of work, to fix definitely a date by which the map will be published and available.

OFFICERS OF THE SUPERIOR STAFF.

Mr. W. H. Reynolds, Superintendent of Forest Surveys.

89. Mr. W. H. Reynolds, Superintendent of Forest Surveys, held charge of the Forest Survey Branch throughout the year under report. He left head-quarters on the 24th November and proceeded to Burma to direct the survey of the forests in the Tenasserim circle; he was with the Burma party until all branches of the work had been fairly started, and then he proceeded on the 12th January to Assam to visit the Goalpara party; he was in the Goalpara District from the 22nd January to the 6th February, and inspected the accounts and other work connected with the field operations. From the 8th to the 15th February he was in the Raipur District, and after doing all that was necessary for the detachment he visited the party working in the Bhandara District, and was there up to the 27th February; Mr. Reynolds then proceeded to Jubbulpore, and was in the Jubbulpore and Mandla Districts up to the 8th March, and during this time inspected the accounts and field work of the Dhanwai detachment; he then proceeded to Dehra-Dun and assisted in the examination in surveying of the students of the Forest School, and on the 28th April he proceeded to Bashahr to supervise and direct the survey work in the Himalayas; he was with the Bashahr party from the beginning of May to early in July, when he returned to Dehra-Dun and remained at head-quarters till the close of the year.

Mr. E. Litchfield, Assistant Superintendent, Forest Surveys.

90. Mr. E. Litchfield, Assistant Superintendent, Forest Surveys, took the field on the 4th November in charge of the Goalpara detachment and returned to head quarters on the 23rd June. He was employed chiefly in completing the balance of the triangulation of the Goalpara forests and Bhutan boundary, and in preparing plane-table sections for his native surveyors. He reports that his time was so fully devoted to triangulation and computations that he was unable, before the close of the field season, to run check surveys through the areas topographically surveyed; the unchecked areas, however, will be tested during the coming field season. The computations done by Mr. Litchfield, or under his supervision, were faulty, and the greater part of the computations of both triangulation and traversing had to be re-computed at the head-quarters office.

After Mr. Litchfield returned from Assam he was deputed to take up the 1-inch scale survey of a portion of the Bashahr state and to fix some additional trigonometrical points in the area under survey. He started from Dehra on the 4th July, and continued field work in Bashahr up to the close of the year under report. The work done by him in Bashahr was most satisfactory.

Mr. T. A. Hauxwell, Deputy Conservator of Forests.

91. Mr. Hauxwell during the field season was in charge of the Tenasserim party. He started the traverse surveyors to work in their respective beats in the forests south of Miawaddi, and then accompanied the Superintendent of Forest Surveys to the central camp at Maplay and remained with Mr. Reynolds until all the plane-tablers were fairly set to work. The provisioning of the several survey camps and providing Shan labour was entirely in Mr. Hauxwell's hands, and this, in a very sparsely populated forest-clad country, with no roads to speak of, and very indifferent transport, was by no means a light task. The only mistake made was that the estimate for the amount of provisions required was

not as carefully prepared as it might have been, and consequently a comparatively large balance of flour, etc., remained on the books at the close of the field season which Mr. Hauxwell had to dispose of at a considerable loss. This need not have occurred had the stock been gradually reduced by Mr. Hauxwell during the last few months of the field season. Mr. Hauxwell, in addition to the charge of the Tenasserim Survey Detachment, had to attend to his forest duties as well.

OFFICERS OF THE JUNIOR DIVISION.

Mr. T. S. Marten, Sub-Assistant Superintendent.

92. From the 8th November to 1st June Mr. T. S. Marten was in charge of the Forest Survey detachment working in the Mandla District. His field work was confined entirely to the forest areas in the Dhanwai Pargana. He returned to head-quarters on the 4th June, and on the 1st July he proceeded on three months' privilege leave. After his return from leave he was employed at the head-quarters office in bringing up the details of office work connected with the Mandla survey, and plotting plane-table sections for the coming field season. Mr. Marten is a willing and energetic assistant and a very neat draughtsman.

Mr. James Marten, Sub-Assistant Superintendent.

93. Mr. James Marten was in charge of the Raipur detachment throughout the field season. He was in the field from the 8th November till 11th July, and returned to head-quarters on the 17th July. His field operations were confined chiefly to the forests in the Balod Range, and he succeeded in turning out a very satisfactory amount of field work. He is a good surveyor and an excellent draughtsman, and has done good work.

Mr. J. H. Nichol, Sub-Assistant Superintendent.

94. Mr. J. H. Nichol was in charge of the Bhandara detachment from the 8th November to 2nd January, and on being relieved of the topographical work by Mr. C. Litchfield, he proceeded to take up the triangulation of the Pauni Range and was employed on this work until the close of the field season; he returned to recess quarters on the 15th April. Throughout the recess season he was employed in bringing up the computation work at the head-quarters office. Mr. Nichol is a good and reliable computor and turned out a very satisfactory season's work; his triangulation also was most satisfactory.

Mr. C. Litchfield, Sub-Assistant Superintendent.

95. At the close of the previous year Mr. C. Litchfield was in the field engaged on 1-inch surveys in Bashahr; he returned to Dehra-Dun on the 10th October, and on the 1st November he went on two months' privilege leave. On his return from leave, on the 2nd January, he was placed in charge of the Bhandara detachment, and was employed chiefly in surveying the forests in the Partabgarh Range. On closing work in the Bhandara District on the 25th May, Mr. Litchfield proceeded to Bashahr and was engaged on 1-inch surveys in the Bashahr State from the 4th July until the close of the survey year.

Mr. Litchfield having passed the survey departmental examination for the Junior Division, he was, on the 10th January 1892, brought on to the graded list of the Survey of India Department as an Assistant Surveyor of the 3rd grade.

Mr. Litchfield has fully mastered the details of the topographical branch of the work, and exhibits great zeal and energy in the performance of his duties.

Mr. A. Descubes.

96. Mr. Descubes has throughout the year been employed at the head-quarters office chiefly in preparing special drawings for forest purposes, super-

vising the map-drawing, and in posting up the Provincial forest map records, as well as other miscellaneous work. The revised forest map of India, which is at present in the press, was prepared by him.

Mr. Descubes is a highly skilled and experienced draughtsman and a most intelligent and expert worker; he is full of zeal and energy and is a most valuable assistant.

NATIVE SURVEYORS.

97. The average strength of Native establishment employed on each branch of the work during the field season was:—

Strength of establishment.

Triangulation	1
Traversing	6
Plotting and computing	6
Plane-tabling	42
In the field	55
At head-quarters	39
TOTAL	94

98. The Native surveyors and office establishment have, with few exceptions, worked exceedingly well throughout the year.

Services of Native establishment.

The following Native assistants are deserving of mention for their hard and satisfactory work:—

Kali Kanth Kar	As a good clerk and excellent accountant.
Salig Ram	As a good triangulator.
Badri Dutt	As a good computor.
Bhup Singh	As excellent field surveyors and draughtsmen.
Oodey Singh	As excellent field surveyors and draughtsmen.
Suban Lal	As a plane-tabler.
Tulsi Ram	As good draughtsmen.
Jadu Nath Nath	As good draughtsmen.

99. The health of the Bashahr and Bhandara parties was fairly good all round; the Dhanwai forests are notably unhealthy, hence the whole Mandla detachment suffered much from fever and dysentery, and several of the khallasies died; the Raipur detachment during the early part of the field season suffered from jungle fever and in March influenza broke out in an epidemic form, then in April cholera made its appearance and much difficulty was experienced in keeping the establishment together and preventing desertions; the Goalpara detachment suffered a good deal from malarial fever, and in Burma most of the surveyors suffered in some degree from fever, and there were three deaths among the khallasies.

Health of the establishment.

WORK DONE BY SURVEY OF INDIA DEPARTMENT FOR THE FOREST SURVEY BRANCH.

100. The maps of the Forest Survey Branch continue to be photozincographed at the Trigonometrical Branch of the Survey of India Department at Dehra-Dun, and other miscellaneous work in the way of printing has been done for us in that office.

Some of the maps sent to the Photozincographic Office last year have not yet been published owing to a press of work in the Dehra Office, and hence numerous maps awaiting publication have been retained in the Forest Survey Office pending intimation that they can be passed through the press.

The charges on account of work done by the Survey of India Department for the Forest Survey Branch, during the year under report, including the cost of maps supplied by the Calcutta Office, amounted to R3,116.

Documents accompanying the Report.

101. The following statements are appended to this Report :—

I. Appendix A.—Summary of outturn of field work and computations.

II. Appendix B.—Summary of outturn of drawing and miscellaneous work.

III. Appendix C.—Summary of expenditure from the 1st October 1891 to 30th September 1892, showing the amount expended on field and office work.

IV. Appendix D.—Area topographically surveyed by the Forest Survey Branch during 1891-92.

V. Annual Form No. 58.—Summary of revenue and expenditure during the financial year (Imperial).

VI. Annual Form No. 58.—Summary of expenditure during the financial year.

VII. Annual Form No. 59.—Account current.

VIII. Annual Form No. 61.—Revenue received and outstanding on account of revenue.

W. H. REYNOLDS,
Superintendent, Forest Surveys.

DEHRA DUN,
The 29th November 1892.

APPENDIX A.

Summary of Outturn of Field Work and Computations by the Forest Survey Department, from 1st October 1891 to 30th September 1892.

No.	Punjab, Central Provinces, Assam, and Burma Surveys.		Amount.	Remarks.
	Plane-tabling.			
1	Area plano-tabled on the scale of 4″=1 mile—			
	(*a*) Bashahr—Punjab	160		
	(*b*) Mandla—Central Provinces . .	118		
	(*c*) Raipur ,, . . .	193		
	(*d*) Bhandara ,, . . .	166		
	(*e*) Goalpara—Assam . . .	307		
	(*f*) Tenasserim Circle—Burma . .	128		
		1,072		
	Area plane-tabled on the scale of 1″=1 mile—			
	Bashahr—Punjab	365		
	Area plane-tabled on the scale of 16″=1 mile—		1,586	square miles.
	(*a*) Mandla—Central Provinces . .	38		
	(*b*) Raipur ,, . . .	48		
	(*c*) Bhandara ,, . . .	63		
		149		
2	Boundary surveyed on 16″ scale (linear)—			
	(*a*) Mandla—Central Provinces . .	288		
	(*b*) Raipur ,, . . .	405		
	(*c*) Bhandara ,, . . .	500	1,246	
		1,193		
3	Boundary surveyed on 4″ scale—			
	Bhutan Goalpara—Assam	53		
4	Number of boundary pillars fixed—			
	(*a*) Goalpara—Assam (outer boundary) .	122	226	
	(*b*) Ditto class lines (inner boundary)	104		
5	Number of plane-table stations in area surveyed—			
	(*a*) Bashahr—Punjab	12,148		
	(*b*) Mandla—Central Provinces . .	21,461		
	(*c*) Raipur ,, . . .	22,304	139,702	
	(*d*) Bhandara ,, . . .	31,304		
	(*e*) Goalpara—Assam	31,130		
	(*f*) Tenasserim Circle—Burma . .	21,355		

No.	Punjab, Central Provinces, Assam, and Burma Surveys.		Amount.	Remarks.
6	Number of plane-table stations for testing work—			
	(a) Bashahr—Punjab	931	9,172	
	(b) Mandla—Central Provinces . . .	1,750		
	(c) Raipur " . . .	4,444		
	(d) Bhandara " . . .	989		
	(e) Goalpara—Assam	529		
	(f) Tenasserim Circle—Burma . .	529		
	Triangulation.			
7	Area triangulated—			
	(a) Bashahr—Punjab	555	2,357	square miles.
	(b) Bhandara—Central Provinces . .	615		
	(c) Goalpara—Assam	544		
	(d) Tenasserim Circle—Burma . .	643		
8	Number of Theodolite stations—			
	(a) Bashahr—Punjab	29	136	
	(b) Bhandara—Central Provinces . .	21		
	(c) Goalpara—Assam	25		
	(d) Tenasserim Circle—Burma . . .	61		
9	Number of points fixed—			
	(a) Bashahr—Punjab	169	528	
	(b) Bhandara—Central Provinces . .	88		
	(c) Goalpara—Assam	21		
	(d) Tenasserim Circle—Burma . . .	250		
	Traversing.			
10	Area traversed—			
	(a) Goalpara—Assam	7	175	square miles.
	(b) Tenasserim Circle—Burma . . .	168		
11	Number of linear miles traversed—			
	(a) Goalpara—Assam	19	205	
	(b) Tenasserim Circle—Burma . . .	186		
12	Number of traverse stations—			
	(a) Goalpara—Assam	169	4,628	
	(b) Tenasserim Circle—Burma . . .	4,459		

No.	Punjab, Central Provinces, Assam, and Burma Surveys.		Amount.	Remarks.
13	Check Surveys or "Partals"—			
	(a) Mandla—Central Provinces . .	13	196	miles.
	(b) Raipur " . .	128		
	(c) Bhandara " . .	22		
	(d) Goalpara—Assam	33		
14	Levelling—			
	(a) Jubbulpur—Central Provinces . .	25	123	linear miles.
	(b) Raipur " . .	98		
	Computations.			
15	Number of linear miles of traversing—			
	(a) Goalpara—Assam	22	131	
	(b) Tenasserim Circle—Burma . . .	109		
16	Number of traverse stations in duplicate—			
	(a) Goalpara—Assam	1,150	4,270	
	(b) Tenasserim Circle—Burma . . .	3,120		
17	Number of triangles in duplicate—			
	(a) Bashahr—Punjab	210	942	
	(b) Bhandara—Central Provinces . .	173		
	(c) Goalpara—Assam	47		
	(d) Tenasserim Circle—Burma . . .	512		
18	Number of points fixed thereby, and of which the rectangular co-ordinates have been computed in duplicate—			
	(a) Bashahr—Punjab	112	530	
	(b) Bhandara—Central Provinces . .	82		
	(c) Goalpara—Assam	43		
	(d) Tenasserim Circle—Burma . . .	293		
19	Number of triangles worked in duplicate to determine heights—			
	(a) Bashahr—Punjab	200	883	
	(b) Bhandara—Central Provinces . .	157		
	(c) Goalpara—Assam	6		
	(d) Tenasserim Circle—Burma . . .	520		

No.	Punjab, Central Provinces, Assam, and Burma Surveys.		Amount.	Remarks.
20	Number of points of which the heights were determined thereby—			
	(a) Bashahr—Punjab	112	467	
	(b) Bhandara—Central Provinces . .	82		
	(c) Goalpara—Assam	3		
	(d) Tenasserim Circle—Burma . . .	270		
21	Abstract of horizontal angles in duplicate—			
	(a) Bashahr—Punjab	745	2,647	
	(b) Bhandra—Central Provinces . .	471		
	(c) Goalpara—Assam	253		
	(d) Tenasserim Circle—Burma . . .	1,178		
22	Number of spherical co-ordinates converted to rectangular co-ordinates in duplicate—(Trigonometrical stations and corners of sheets, etc.)—			
	(a) Raipur—Central Provinces . . .	98	563	
	(b) Bhandara " . . .	24		
	(c) Jubbulpur " . . .	161		
	(d) Mandla " . . .	33		
	(e) Narsingpur " . . .	95		
	(f) Pilibhit—Oudh	81		
	(g) Kheri "	16		
	(h) Tenasserim Circle—Burma . . .	55		
23	Number of Revenue Survey co-ordinates of Narsingpur converted in terms of Forest Survey origin		5,842	
24	Number of tangent scale clinometers' observations—			
	(a) Bashahr—Punjab	1,502	3,117	
	(b) Jubbulpur—Central Provinces . .	825		
	(c) Raipur— " . . .	37		
	(d) Bhandara— " . . .	554		
	(e) Tenasserim Circle—Burma . .	199		
25	Number of heights determined by tangent scale clinometers—			
	(a) Bashahr—Punjab	693	1,613	
	(b) Jubbulpur—Central Provinces . .	350		
	(c) Raipur— " . .	12		
	(d) Bhandara— " . .	437		
	(e) Tenasserim Circle—Burma . . .	121		

APPENDIX B.

Summary of Outturn of Drawing executed by the Forest Survey Branch, from 1st October 1891 to 30th September 1892.

No.	Particulars.	Number of Sheets.	Remarks.
	Original Drawings.		
	NORTH-WESTERN PROVINCES AND OUDH.		
	Central Circle.		
1	Kumaun and Garhwal, sheets Nos. LIV, LX, scale 4″=1 mile (published).	2	
2	Kumaun and Garhwal, sheets Nos. LIII*, LIIIA*, LIVA*, scale 4″=1 mile (sent to press).	3	
	School Circle.		
3	Map of the Government Forests of Teri Garhwal in Jaunsar, sheets Nos. $348\frac{S.E.}{1}$, $348\frac{S.W.}{2}$, scale 4″=1 mile (published).	2	
4	Map of the Government Forests of Teri Garhwal in Jaunsar, sheets Nos. $333^{*}\frac{S.E.}{2}$, $348^{*}\frac{S.W.}{1}$, scale 4″= 1 mile (sent to press).	2	
5	Map of the Karamba block, part of Karamba Forest, Jaunsar Division, sheets Nos. 223* (Punjab) and 227 (North-Western Provinces and Oudh), scale 4″=1 mile (sent to press).		
6	Map of the Lachiwala Coppice, Working Circle, Debra Dun Division, scale 4″=1 mile (sent to press).	1	
7	Map of the Government Forests of Teri Garhwal in Jaunsar, sheets Nos. $333\dagger\frac{N.E.}{4}$, $348\dagger\frac{N.W.}{3}$, scale 4″=1 mile (in progress).	2	
	Punjab.		
8	Map of the Government Forests in the District of Simla, sheets Nos. $332\frac{S.W.}{2}$, $332\frac{N.W.}{3}$, $332\frac{S.W.}{3}$, $332\frac{N.W.}{4}$, $346\frac{S.W.}{1}$, $346\frac{S.E.}{1}$, $346\frac{S.W.}{3}$, $346\frac{S.E.}{3}$, $346\frac{S.W.}{4}$, $347\frac{N.E.}{1}$, $347\frac{N.W.}{2}$, $352\frac{S.W.}{1}$, scale 4″=1 mile (published).	12	
9	Index Map to the Forest Survey of Bashahr, scale 1″= 8 miles (published).	1	
10	Map of the Government Forests in the District of Simla, sheets Nos. $332\frac{S.W.}{1}$, $333\frac{N.W.}{1}$, $346\frac{S.E.}{2}$, $346\frac{N.E.}{4}$, scale 4″ =1 mile (sent to press).	4	
11	Map of the Government Forests in the District of Simla, sheets Nos. $332\frac{S.E.}{3}$, $332\dagger\frac{S.W.}{4}$, $347\dagger\frac{N.E.}{3}$, $347\dagger\frac{N.E.}{4}$, $347\dagger\frac{N.W.}{4}$, scale 4″=1 mile (ready for press).	5	

* Reported in 1890-91 as being in the press.
† Reported in 1890-91 as being in progress.

No.	Particulars.	Number of Sheets.	Remarks.
12	Map of the Government Forests in the District of Simla, sheets Nos. 331 S. E./2, 331† S. E., 332† S. E./1, 333 N. E./1, 333† N. W./3, 346† N. E./3, 347† N. W./1, scale 4″=1 mile (in progress).	7	
13	Map of the Government Forests in the District of Simla, sheet No. 347, scale 1″=1 mile (in progress).	1	
14	Chart of Bashahr Triangulation, sheets Nos. 331†, 332†, 333†, 348†, scale 1″=1 mile (in progress).	4	
	Assam.		
15	Index Map to the Forest Survey of District Goalpara, scale 1″=8 miles (published).	1	
16	Map of Darugiri, Western Circle, Garo Hills Division, scale 1″=4 miles (published).	1	
	Berar.		
17	Index Map of the Bairagarh and Gugumal Reserves showing the working-plan blocks and compartments with area statement, scale ½″= 1 mile (in duplicate).	2	
18	Map of the Melghat Taluk, District Ellichpur, Berar, in three sheets, scale 1″ = 1 mile (in progress).	3	
	Central Provinces.		
	Jubbulpur.		
19	Map of the Government Forests in the Jubbulpur Division, part of Jubbulpur Range, sheets Nos. 107* S. E./1, 107* S. W./1 and 2, 107* S. E./2 and N. E./4, 107* S. W./3, 107* S. E./3, 107* S. W./4, 108* N. W./1, 108* N. W./2, 108* N. W./3, 108* N. W./4, 130* S. W./3, scale 4″=1 mile (sent to press).	11	
20	Map of the Government Forests in the Jubbulpur Division, part of Jubbulpur Range, sheets Nos. 86 S. E./2, 86 S. W./2, 86† S. E./3, 86† S. W./4, 87† N. E./1, 87 S. E./1, 87 N. E./2, 87 S. E./2, 87† N. W./2, 87 N. E./3, 87 N. E./4, 87† N. W./4, 105 N. E./4, 106 N. E./1 and 2, 108† N. E./1, 128 S. E./2, 128 S. E./3, 128 S. W./3, 128 S. E./4, 128 S. W./4, and 129 N. W./2, 128 N. E./4, 129 N. W./1 and 2, 129 S. E./1, 129 S. W./1, 129 S. E./3, 129 S. W./2, 129 S. E./3, 129 S. W./3, 129 S. W./4, 129 N. W./4, 129 S. E./4, 130 N. E./2, 130 N. E./4, scale 4″=1 mile (ready for press).	33	
21	Map of the Government Forests in the Jubbulpur Division, part of Jubbulpur Range, sheets Nos. 105 S. E./1 and 3, 105 S. W./2, 105 N. W./4, 105 S. W./4, 106 S. E./2, 106, S. E./1 and 3, 106 N. E./4, 129 N. W./3, 129 S. E./3, 130 S. W./1, 130 N. W./3, 130 N. E./3 and N. W./4, scale 4″=1 mile (in progress).	12	

* Reported in 1890-91 as being in the press.
† Reported in 1890-91 as being in progress.

No.	Particulars.	Number of sheets.	Remarks.
	Chanda.		
22	Map of the Ahiri Forests, District Chanda, sheets Nos. 122 † $\frac{S.W.}{3 \text{ and } 4}$, 122 † $\frac{N.W.}{4}$, and $\frac{S.W.}{3}$, 123 † $\frac{N.W.}{1 \text{ and } 2}$, 123† $\frac{S.W}{1 \text{ and } 2}$, 123 † $\frac{S.W.}{3 \text{ and } 4}$, 123 † $\frac{N.W.}{3 \text{ and } 4}$, scale 4″=1 mile (sent to press).	6	
	Raipur.		
23	Index Map to the Forest Survey of District Raipur, scale 1″=16 miles (published).	1	
24	Map of the Government Forests in the District of Raipur, sheets Nos. 187 † $\frac{N.E.}{1}$, 187 † $\frac{S.W.}{1}$, 187 † $\frac{S.W.}{3}$, 208 † $\frac{N.W.}{3}$, scale 4″=1 mile (ready for press).	4	
25	Map of the Government Forests in the District of Raipur, sheets Nos. 141 $\frac{N.E.}{4}$ and 164 $\frac{N.W.}{3}$, 141 $\frac{S.E.}{2}$ and 164 $\frac{S.W.}{1 \text{ and } 2}$, 187 $\frac{S.W.}{2}$, 187 $\frac{N.W.}{3}$, 187 $\frac{N.E.}{3}$, 187 $\frac{N.W.}{4}$, 187† $\frac{S.W.}{4}$, 208† $\frac{N.W.}{1}$, scale 4″=1 mile (in progress).	8	
	Bhandara.		
26	Index Map to the Forest Survey of District Bhandara, scale 1″=8 miles (published).	1	
27	Map of the Government Forests in the District of Bhandara, sheets Nos. 92† $\frac{S.E.}{1}$, 92 $\frac{S.W.}{1}$, 92 $\frac{S.W.}{2}$, 92† $\frac{N.E.}{2}$, and 114 $\frac{N.W.}{1}$, 92† $\frac{S.E.}{2}$, 92 $\frac{S.W.}{3}$, 92 $\frac{N.W.}{1}$, 92† $\frac{N.E.}{3}$, 92 $\frac{S.W.}{4}$, 92 $\frac{N.W}{4}$, 92† $\frac{N.E}{4}$, 92† $\frac{S.E.}{3 \text{ and } 4}$, 93 $\frac{N.E.}{1}$, 93 $\frac{N.W.}{1}$, 93 $\frac{N.W.}{2}$, 93 $\frac{N.W.}{3}$, scale 4″=1 mile (in progress).	16	
	BURMA.		
	Pegu Circle.		
28	Map of North Nawin, South Nawin, and Chaungzank Working Circles, scale 1″=1 mile (published).	3	
29	Map of the Kangyi Reserve, scale 2″=1 mile (in progress)	1	
	Tenasserim Circle.		
30	Index Map to the Forest Survey in the east and west of Salween and part of Attaram Division, scale 1″=32 miles (published).	1	
31	Map of the Government Forests in the east and west of Salween and part of Attaram Division, sheets Nos. 165 $\frac{S.E.}{1}$, 165 $\frac{N.W.}{2 \text{ and } 4}$ and $\frac{N.E.}{1 \text{ and } 3}$, 165 $\frac{S.E.}{3}$, 165 $\frac{S.E.}{4}$, scale 4″=1 mile (in progress).	4	
	UPPER BURMA.		
32	Map of the Mon Reserve (west), Mimbu District, scale 1″=1 mile (published).	1	
33	Map of the Nwamadaung proposed reserve, Mimbu District, scale 1″=1 mile (published).	1	
34	Map of Mimbu Division, Taungdwin Range, in two sections, scale 1″=1 mile (published).	2	

† Reported in 1890-91 as being in progress.

No.	Particulars.	Number of sheets.	Remarks.
35	Map of the proposed Laung Taung Teak and Cutch Reserve, scale 1" = 1 mile (ready for press).	1	
36	Map of the proposed Mouk Kunze Teak and Cutch Reserve, scale 1" = 1 mile (ready for press).	1	
	Tracings made.		
37	Tracings made for various Forest and District officers .	45	
	Map coloring.		
38	Printed maps of various kinds colored	1058	
	Mounted maps.		
39	Printed maps mounted in book form	493	
40	Computation volumes and other books bound . . .	101	
	Forest growth.		
41	Map of the Government Forests in Bashahr in the District of Simla, sheets Nos. 332 $\frac{N.W.}{2}$, 333 $\frac{S.W.}{2}$, 332 $\frac{N.W.}{3}$, 332 $\frac{S.W.}{3}$, 346 $\frac{S.E.}{1}$, 346 $\frac{S.W.}{1}$, 346 $\frac{S.E.}{3}$, 346 $\frac{S.W.}{3}$, 346 $\frac{S.W.}{4}$, 347 $\frac{N.E.}{1}$, 347 $\frac{N.W.}{2}$, 352 $\frac{S.W.}{1}$, scale 4" = 1 mile (in duplicate).	24	
42	Map of the Government Forests in the District of Jubbulpur, Central Provinces, sheets Nos. 87 $\frac{N.E.}{1}$, 107 $\frac{S.E.}{2}$, 107 $\frac{S.E.}{3}$, 107 $\frac{S.E.}{4}$, 107 $\frac{S.W.}{4}$, 108 $\frac{N.W.}{3}$, 108 $\frac{N.W.}{4}$, 130 $\frac{S.W.}{3}$, scale 4" = 1 mile (in duplicate).	16	
43	Map of the Government Forests in the District of Raipur, Central Provinces, sheet No. 183 $\frac{S.E.}{1}$, scale 4" = 1 mile (in triplicate)	3	
44	Map of the Government Forests in the District of Goalpara, sheets Nos. 1 $\frac{N.E.}{2}$, 1 $\frac{N.E.}{4}$, 1 $\frac{S.E.}{2}$, 8 $\frac{N.W.}{1}$, 8 $\frac{N.W.}{2}$, 8 $\frac{N.W.}{3}$, 8 $\frac{N.W.}{4}$, 8 $\frac{S.W.}{1}$, 8 $\frac{S.W.}{2}$, 8 $\frac{S.W.}{3}$, 8 $\frac{S.W.}{4}$, 8 $\frac{N.E.}{1}$, 8 $\frac{N.E.}{2}$, 8 $\frac{N.E.}{3}$, 8 $\frac{N.E.}{4}$, 8 $\frac{S.E.}{1}$, 8 $\frac{S.E.}{2}$, 8 $\frac{S.E.}{3}$, and 9 $\frac{N.E.}{3}$, 8 $\frac{S.E.}{4}$, 7 $\frac{S.W.}{4}$, 7 $\frac{N.E.}{4}$, 7 $\frac{E.S.}{1}$, 7 $\frac{E.S.}{2}$, 7 $\frac{S.E.}{3}$, $\frac{S.E.}{4}$, scale 4" = 1 mile.	25	

APPENDIX C.

Summary of Expenditure from 1st October 1891 to 30th September 1892, showing the amounts expended in the Field and Office Works of the Forest Surveys (Imperial.)

No	Months.	North-Western Provinces and Oudh. Central Circle. Naini Tal. Office.	Naini Tal. General.	School Circle. Jaunsar. Office.	Jaunsar. General.	Punjab. Bashahr. Field.	Office.	General.	Central Provinces. Mandla and Jubbulpur. Field.	Office.	General.	Raipur. Field.	Office.	General.	Bhandara. Field.	Office.	General.	Chanda. Office.	General.	Nassingpur. Office.	General.	Berar. Melghat. Office.	General.	Assam. Goalpara. Field.	Office.	General.	Burma. Tenasserim Circle. Field.	Office.	General.	Imperial Head-Quarters.	Grand Total.	Remarks.
		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	
1	October 1891	...	61	...	10	1,159	371	100	...	146	143	...	89	159	...	73	131	...	50	...	...	...	...	133	88	87	...	186	50	3,039	6,078	
2	November "	19	...	6	99	284	367	201	...	147	150	...	65	197	...	121	148	...	...	...	...	...	...	...	331	345	...	45	377	2,915	5,817	
3	December "	...	25	...	...	...	177	...	477	83	496	367	...	362	499	70	245	20	...	...	...	...	...	41	...	1,162	72	...	8,378	2,488	11,967	
4	January 1892	...	...	...	...	...	102	...	931	82	298	820	...	476	...	66	150	91	...	...	...	...	...	700	300	397	...	...	1,463	3,236	9,162	
5	February "	97	...	...	...	...	104	...	918	78	51	1,001	...	114	1,770	138	620	10	...	...	...	...	...	1,933	27	1,619	685	...	3,606	1,522	14,298	
6	March "	...	...	...	...	...	136	160	1,079	62	628	898	...	560	1,267	144	607	46	...	...	...	...	98	2,908	448	526	4,213	...	574	1,140	15,494	
7	April "	50	...	...	...	...	190	637	983	75	103	446	10	106	1,337	40	100	4	...	...	...	...	...	941	26	100	...	20	...	1,726	6,894	
8	May "	56	...	...	...	80	154	950	..	21	100	5	...	137	897	...	138	...	...	40	...	...	331	2,577	25	...	1,063	28	2,796	2,511	11,912	
9	June "	...	...	...	...	722	157	862	1,812	80	426	1,579	35	212	363	28	319	...	...	140	...	32	...	2,025	58	720	5,355	108	225	1,394	16,652	
10	July "	...	...	...	...	1,710	131	739	...	58	373	819	20	526	...	15	215	...	...	41	97	59	...	846	228	419	...	232	156	1,487	8,261	
11	August "	...	...	...	...	2,637	235	570	...	129	119	...	64	125	24	20	248	...	...	10	...	12	...	...	13	114	1,609	325	1,653	1,643	9,000	
12	September "	...	...	...	...	2,510	341	50	...	114	96	...	52	50	...	24	10	...	...	31	...	12	...	...	...	98	...	369	50	2,157	8,114	
	Total	222	89	6	109	9,102	2,515	4,329	6,250	1,080	2,963	5,965	335	3,024	6,157	739	3,081	171	50	262	97	115	432	2109	1,544	5,587	12,997	1,313	18,728	25,258	1,24,649	
		311		115		15,946			10,313			9,324			9,977			221		359		547		19,240			33,038			25,258	1,24,649	
		426				15,946			30,194													547		19,240			33,038			25,258	1,24,649	

APPENDIX D.

Area topographically surveyed by the Forest Survey Department during 1891-92.

No.	Province and District.		Area in square miles.			Remarks.
			Demarcated Forests.	Other lands.	Total.	
1	Central Provinces	Mandla .	156	...	156	
		Raipur .	241	...	241	
		Bhandara .	229	...	229	
2	Punjab—Bashahr . . .		160	365	525	All forests in Bash ahr whether demarcated or not, are held in lease by the Punjab Government.
3	Assam—Goalpara . . .		307	...	307	
4	Lower Burma—Tenasserim Circle		128	...	128	
	Total .		1,221	365	1,586	

ANNUAL FORM No. 58 (*Prescribed*).

Forest Department, India—Forest Survey Division.

Summary of Revenue of the different Divisions during 1891-92.

Receipts.	R	a.	p.
I.—Timber and other produce removed from the forests by Government agency—			
a. Timber			...
b. Firewood and charcoal			...
c. Bamboos			...
d. Sandal-wood			...
e. Grass and other minor produce			...
II.—Timber and other produce removed from the forests by consumers or purchasers—			
a. Timber			...
b. Firewood and charcoal			...
c. Bamboos			...
d. Grazing and fodder grass			...
e. Other minor produce			...
III.—Drift and Waif Wood and Confiscated Forest Produce— .			
IV.—Revenue from forests not managed by Government—			
a. Duty on foreign timber and other forest produce . .			...
b. Revenue from shared and private forests . . .			...
V.—Miscellaneous—			
a. Fines and forfeitures			
b. Refunds	161	10	10
c. Other sources	95	7	6
Total Receipts .	257	2	4

ANNUAL FORM No. 58 (*Prescribed*)—continued.

FOREST DEPARTMENT, INDIA—FOREST SURVEY DIVISION.

Summary of Expenditure of the different Divisions during 1891-92.

A.—CONSERVANCY AND WORKS.

	R	a.	p.
I.—Timber and other produce removed from the forests by Government agency—			
a. Timber			...
b. Firewood and charcoal			...
c. Bamboos			...
d. Sandal-wood			...
e. Grass and other minor produce			...
II.—Timber and other produce removed from the forests by consumers or purchasers—			
III.—Drift and Waif Wood and Confiscated Forest Produce—			
IV.—Revenue from forests not managed by Government—			
a. Duty on foreign timber and other forest produce			...
b. Revenue from shared and private forests			...
V.—Rent of leased forests and payments to Shareholders in forests managed by Government—			
VI.—Live Stock, Stores, Tools and Plant—			
a. Purchase of cattle			...
b. Feed and keep of cattle			...
c. Purchase of stores, tools and plant	1,964	13	3
VII.—Communications and Buildings—			
a. Roads and bridges			...
b. Buildings			...
c. Other works			..
VIII.—Demarcation, improvement, and extension of forests—			
a. Demarcation			...
b. Compensation for land and rights			...
c. Surveys and working-plans	3,749	12	5
d. Sowing and planting			...
e. Protection from fire			...
f. Other works			...
IX.—Miscellaneous—			
a. Refunds			...
b. Law charges			...
c. Other charges	3	12	0
TOTAL A—CONSERVANCY AND WORKS	5,718	5	8

B.—ESTABLISHMENT.

I.—Salaries—			
a. Conservators			...
b. Superior Officers	10,935	6	0
c. Upper Subordinate Establishments	280	0	0
d. Lower Subordinate Establishments	6,189	10	9
e. Deputation and Special Allowances			...
Carried over	17,405	0	9

ANNUAL FORM No. 58 (*Prescribed*)—*continued.*

Forest Department, India—Forest Survey Division.

Summary of Expenditure of the different Divisions during 1891-92.

B.—Establishment—*continued.*	R	a.	p.
Brought forward	17,405	0	9
II.—Travelling Allowances—			
a. Conservators	...		
b. Superior Officers	...		
c. Upper Subordinate Establishments	...		
d. Lower Subordinate Establishments	106	4	0
III.—Contingencies—			
a. Stationery	27	14	0
b. Carriage of tents and records	221	12	9
c. Rents, rates and taxes	1,065	2	7
d. Pay of Police Guards	...		
e. Official postage	416	6	0
f. Sundries	1,921	0	11
Total B—Establishments	21,163	9	0
GRAND TOTAL OF EXPENDITURE	26,881	14	8

Receipts.

I.—Timber and other produce removed from the forests by Government agency—			
a. Timber	...		
b. Firewood and charcoal	...		
c. Bamboos	...		
d. Sandal-wood	...		
e. Grass and other minor produce	...		
II.—Timber and other produce removed from the forests by consumers or purchasers—			
a. Timber	...		
b. Firewood and charcoal	...		
c. Bamboos	...		
d. Grazing and fodder grass	...		
e. Other minor produce	...		
III.—Drift and Waif Wood and Confiscated Forest Produce—			
IV.—Revenue from forests not managed by Government—			
a. Duty on foreign timber and other forest produce	...		
b. Revenue from shared and private forests	...		
V.—Miscellaneous—			
a. Fines and forfeitures	...		
b. Refunds	161	10	10
c. Other sources	95	7	6
Total Receipts	257	2	4

ANNUAL FORM No. 58 (*Prescribed*)—*continued.*

Forest Department, India—Forest Survey Division.

Summary of Expenditure of the different Divisions during 1891-92.

A.—Conservancy and Works.	R	a.	p.
I.—Timber and other produce removed from the forests by Government agency—			
a. Timber	...		
b. Firewood and charcoal	...		
c. Bamboos	...		
d. Sandal-wood	...		
e. Grass and other minor produce	...		
II.—Timber and other produce removed from the forests by consumers or purchasers—			
III.—Drift and Waif Wood and Confiscated Forest Produce—			
IV.—Revenue from forests not managed by Government—			
a. Duty on foreign timber and other forest produce	...		
b. Revenue from shared and private forests	...		
V.—Rent of leased forests and payments to Shareholders in forests managed by Government—			
VI.—Live Stock, Stores, Tools and Plant—			
a. Purchase of cattle	6,600	0	0
b. Feed and keep of cattle	2,726	15	2
c. Purchase of stores, tools and plant	3,944	8	4
VII.—Communications and Buildings—			
a. Roads and bridges		...	
b. Buildings		...	
c. Other works		...	
VIII.—Demarcation, improvement, and extension of forests—			
a. Demarcation		...	
b. Compensation for land and rights		...	
c. Surveys and working-plans	29,864	10	7
d. Sowing and planting		...	
e. Protection from fire		...	
f. Other works		...	
IX.—Miscellaneous—			
a. Refunds		...	
b. Law charges		...	
c. Other charges	90	2	3
Total A—Conservancy and Works	43,226	4	4
B.—Establishment.			
I.—Salaries—			
a. Conservators		...	
b. Superior Officers	23,325	6	0
c. Upper Subordinate Establishments	8,752	0	0
d. Lower Subordinate Establishments	15,206	4	2
e. Deputation and special allowances	613	4	2
Carried over	47,896	14	0

ANNUAL FORM No. 58 (*Prescribed*)—*concluded.*

FOREST DEPARTMENT, INDIA—FOREST SURVEY DIVISION.

Summary of Expenditure of the different Divisions during 1891-92.

B.—ESTABLISHMENT—*contd.*	R	a.	p.
Brought forward	47,896	14	4
II.—Travelling Allowances—			
a. Conservators		...	
b. Superior Officers	4,191	3	8
c. Upper Subordinate Establishments	4,475	5	6
d. Lower Subordinate Establishments	7,634	14	6
III.—Contingencies—			
a. Stationery	27	14	0
b. Carriage of tents and records	1,932	4	6
c. Rents, rates and taxes	1,170	4	8
d. Pay of Police Guards		...	
e. Official postage	442	15	6
f. Sundries	3,116	7	2
TOTAL B—ESTABLISHMENTS	70,888	3	10
GRAND TOTAL OF EXPENDITURE	1,14,114	8	2

ANNUAL FORM No. 59 (*Prescribed*).

Forest Department, India—Forest Survey Division.

Account Current for the year 1891-92.

Dr.

	R a. p.	R a. p.
To Cash Balance . .	...	...
To VIII.—Assessed Taxes—Income Tax—Deductions from salaries .	...	976 13 4
To Revenue as per Annual Summary, Form No. 58	...	257 2 4
To Service Funds—		
Civil Fund—Ordinary, Bengal . . .	...	...
Civil Fund—Additional, Bengal . . .	...	...
Military Fund—Bengal .	...	...
Military Fund—Madras .	...	...
Military Orphan Fund—Bengal . . .	...	...
Uncovenanted Service Family Pension Fund—Bengal . . .	391 2 0	...
General Family Pension Fund . . .	...	...
Hindu Family Annuity Fund . . .	...	...
		391 2 0
To Deposits . . .	...	...
To Forest Cash Remittances—Local—		
Forest cheques drawn .	...	...
Inter-Divisional Transfers . . .	...	...
To Advances Recoverable .	...	80,858 1 11
To Suspense . . .	...	13 8 0
To Account Current (other Governments)—		
Remittances from Government of Central Provinces . .	18,274 14 8	...
Remittances from Government of Assam . .	12,484 9 11	...
Remittances from Government of North-Western Provinces and Oudh . . .	55,474 12 9	...
Remittances from Government of Punjab .	5,089 10 1	...
Remittances from Government of Burma .	14,116 3 8	...
		1,06,340 3 1
To Inter-Departmental Transfers—		
Public Works Department	...	...
Military Department Bengal . . .	453 7 4	
Civil Department—		
Jail . . .	...	...
Mathematical Instrument Department .	2,011 9 0	...
Miscellaneous . .		...
Survey of India .	3,367 11 0	
		5,832 11 4
Total .	...	1,94,669 10 0

Cr.

	R a. p.	R a. p.
By Expenditure as per Annual Summary Form No. 58 . . .	...	26,881 14 8
By Deposits . . .	...	...
By Forest Cash Remittances (Local)—		
Remittances to Treasuries	...	...
Inter-Divisional Tranfers	...	...
By Advances Recoverable	...	80,276 0 10
By Suspense . . .	...	13 8 0
By Account Current (other Governments)—		
Remittances to the Government of North-Western Provinces and Oudh . . .	703 14 2	...
Remittances to the Government of Central Provinces . .	28,761 10 2	...
Remittances to the Government of Assam .	21,653 8 5	...
Remittances to the Government of Punjab .	12,764 5 3	...
Remittances to the Government of Burma .	21,877 13 3	
Remittances to the Government of Bengal .	802 10 0	
		86,563 13 3
By Account Current with Foreign States—		
Berar Suspense Account	...	933 9 3
Inter-Departmental Transfers—		
Military Department .	...	...
Civil Department .	...	...
Mathematical Instrument Department .	0 12 0	
		0 12 0
By Cash Balance . .	...	...
Total .	...	1,94,669 10 0

ANNUAL FORM No. 61 (*Prescribed.*)

Forest Department, India—Forest Survey Division.

Outstandings and Liabilities on account of Contractors and Disbursers for 1891-92.

Division.	Department Debtor.			Department Creditor.			Balance Due.	
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To Department (Outstandings.)	By Department (Liabilities.
		R a. p.	R a. p.	R a. p	R a. p	R a. p.	R a. p.	
Forest Surveys . . .	...	80,858 1 11	80,858 1 11	8,430 15 4	88,276 0 10	88,707 0 2	7,848 14 3	...

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